System Performance Data Sheet

Project: Magic Sky Girl Scout Camp

This System Performance Sheet records test results from effluent samples taken at key points throughout the wastewater treatment system.
In addition, here are some quick system facts and a legend for the wastewater characteristics. See the flow configuration below.

Quick Facts

Building / Facilities: Resort/Camp
Occupants: Not Applicable
Start-up: June-07
Location: Red Feathers Lake, Colorado
Designer / Engineer: Church & Associates
Contractor / Installer: SRC Enterprises, Inc
Service Provider: Alberts Water & Wastewater Services
Regulating Authority: CO Department of Health
Design Flows (gpd): 13,500
Grease Tank (gal): None
Septic Tank (gal): Individual STEP Tanks
Recirc. Tank (gal): 20,000
Filter: (8) AX100's
Disinfection: UV
System Configuration: Mode 3
Disposal Treatment System: Surface Discharge

# of Samples: 43

Average Loading Rate (gpd/ft2): 1.7

Legend

BOD5: Biochemical Oxygen Demand (*5 day, uninhibited*)
cBOD5: Carbonaceous Biochemical Oxygen Demand (*5 day, inhibited*)
TSS: Total Suspended Solids
TKN: Total Kjeldahl-Nitrogen (*Organic and Ammonia Nitrogen*)
NH3-n: Ammonia-Nitrogen
NO2-n: Nitrite-Nitrogen
NO3-n: Nitrate-Nitrogen
NOX-n: NO3-n+NO2-n
TN: Total Nitrogen = (TKN) + (NO3-n) + (NO2-n)
DO: Dissolved Oxygen
pH: Measure of acidity, 7 is neutral. Wastewater w/value <6 or >9 are difficult to treat biologically
Alk: Alkalinity
TP: Total Phosphorus
G&O: Grease and Oil
FC: Fecal Coliform
EC: *E. coli*

(>) Numbers shown in italics were actually reported as greater than
Numbers shaded were actually reported as less than
Numbers in cells with black borders represent samples collected during the nitrogen treatment "maturation period" following system start a period during which bacterial populations needed for nitrogen removal are developing--these samples results have been excluded from
Bold Non-Detect. Entered detection limit value
* Fecal Coliform is a geometric mean

Notes: Influent results for Jan. and Feb. 2008 are influenced by very little camp occupancy and automatic filter flushing from the water treatment system (wastewater very diluted)

			Septic Tank Influent														AdvanTex Effluent																				
Sample Date	Test Type	Monthly Average (GPD)	BOD5	TSS	TURB	TKN	NH3	NO2	NOx	TN	pH	Temp	G&O	Alk	TP	FC	BOD5	TSS	TURB	TKN	NH3	NO2	NOx	TN	DO	pH	Temp	G&O	Alk	TP	E. Coli	Hydrauli Loading Rate (gpd/ft2)	Organic Loading Rate (lbs/ft2/day)
			mg/L	*mg/L*	*NTU*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*		*celsius*	*mg/L*	*mg/L*	*mg/L*	*mpn/100ml*	*mg/L*	*mg/L*	*NTU*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/l*		*celsius*	*mg/L*	*mg/L*	*mg/L*	*mpn/100ml*		
Jul-07		2800	421	34													6	5			96.6										4	3.50	0.012
8/8/2007							71.4														93.9												
8/22/2007						75.3	55.1		0.3	75.6				419.3						108.9	106		0.8	109.69					526					
8/29/2007						84	69		0.07	84.1				416						89	40		18.98	107.98					401					
8/1/2007		600	386	27		78	75		0.58	78.6				413			7	5		54	54		49	103					210		16	0.75	0.002
9/2/2007		800	251	36		76	73		0.07	76.1				395			2	5		25	39.5		33	58					153		2	1.00	0.002
10/4/2007		900	422	43		86	77		0.07	86.1				426			2	5		4.6	2.44		27	31.6					118		1	1.13	0.004
11/5/2007		500	236	34			29.4										2	5			2.53										1	0.63	0.001
12/5/2007	composite	300	528	16		33	32		0.18	33.2				216			2	7		1.6	0.03		21.24	22.8					125.8		1	0.38	0.002
1/2/2008	composite	1100	70	24		28.6	28.17		0.07	28.7				266			2	5		0.5	0.48		19.32	19.8					131.2		1	1.38	0.001
2/6/2008	composite	400	25	5		10.5	10.71		0.07	10.6				120			2	5		2.4	0.14		11.33	13.73					109.9		1	0.50	0.000
3/5/2008	composite	376	376	20		60.3	50.66		0.07	60.4				342.6			2	5		1.9	0.17		6.41	8.31					115		1	0.47	0.001
4/2/2008	composite	586	280	22		63	45.72		0.07	63.1				344.4			2	5		2.1	0.23		9.16	11.26					105.7		1	0.73	0.002
5/1/2008	composite	2458	537	44		134	122.73		0.07	134				554.5			2	5		2.8	0.58		15.58	18.38					98.4			3.07	0.014
6/4/2008	composite	4263	35	41		29.6	24.46		0.07	29.7				177.7			3	5		2.4	0.18		12.19	14.59					55.6			5.33	0.002
7/8/2008	composite	2854	1101	125		86.8	51.81		0.07	86.9				420.7			9	5		11.4	5.85		16.14	27.54					131.9		70	3.57	0.033
8/5/2008	composite	2022	447	106		160	148.27		0.07	160				583.0			17	6		8.4	4.79		16.05	24.45					134.6		210	2.53	0.009
9/2/2008	composite	1904	456	191		41.7	31.14		0.19	41.9				253.2			2	5		4.6	0.50		30.25	34.85					69.4		62	2.38	0.009
10/7/2008	composite	383	386	116		125	114.50		0.07	125				481.5			2	5		3.0	0.67		7.70	10.7					115.1		2	0.48	0.002
11/4/2008	composite	215	681	269		27.6	17.63		0.36	28				404.7			2	5		1.3	0.15		12.51	13.81					105.2		1	0.27	0.002
12/2/2008	composite	116	277	129		8.1	3.15		0.07	8.17				215.5			2	5		2.4	0.07		17.34	19.74					106.9		1	0.15	0.000
1/6/2009	composite	0	765	17		93.5	83.20		0.07	93.6				413.9			2	5		2.3	0.08		19.07	21.37					110.3		1	0.00	0.000
2/3/2009	composite	450	271	100		81.5	62.11		0.07	81.6				419.3			2	5		2.7	0.11		21.29	23.99					108.5		1	0.56	0.001
3/3/2009	composite	1290	43	66		9.5	5.29		0.11	9.61				93.9			11	5		6.3	3.29		13.16	19.46					156.3		1	1.61	0.001
4/7/2009	composite	2176	501	32		23.1	17.38		0.07	23.2				172.6			2	5												75.7			2.72	0.011
5/5/2009	composite	2236	32	27		2.7	0.19		2.44	5.14				47.4																		2.80	0.001
5/12/2009	composite	2236															2	5		1.5	0.18		9.53	11.03					32.2			2.80	0.000
5/12/2009		2236																													16	2.80	0.000
5/19/2009	composite	2236	265	42																												2.80	0.006
6/2/2009	composite	2530	266	34		61.1	53.21		0.07	61.2				300.4			2	5		3.2	0.38		16.84	20.04					20.2			3.16	0.007
6/2/2009		2530																													14	3.16	0.000
7/1/2009	composite	2423																														3.03	0.000
7/1/2009		2423																													4	3.03	0.000
7/7/2009	composite	2423	366	50		97.5	97.20		0.07	97.6				458.0			7	5		5.7	0.98		23.48	29.18					82			3.03	0.009
8/5/2009	composite	1400	394	186		112	107.08		0.07	112.4				491.2			13	6												131.8			1.75	0.006
8/18/2009	composite	1400																		9	5..62		19.1	28.1							37	1.75	0.000
8/25/2009	composite	1400																			4.16											1.75	0.000
10/6/2009	composite	419	714	55		75.9	63.10		0.07	76.0				339.1			3	5		3	2.01		10.77	13.77					140.8		1	0.52	0.003
11/3/2009	composite	235	300	30		95.3	99.67		0.07	95.4				413.4			2	5		0.4	0.26		8.76	9.16					147.2		1	0.29	0.001
12/1/2009	composite	168	315	18		33.5	29.49		0.07	33.6				207.5			3	5		1.9	0.16		16.09	17.99					130.6		1	0.21	0.001
12/22/2009	composite	168		34																				0								0.21	
1/5/2010	composite	979		161	15	13.5	9.97		0.07	13.6				207.2			2	5		0.1	0.13		23.02	23.12					107.4		1	1.22	
1/12/2010	composite	979		66																												1.22	
Average*		**1373**	**372**	**66.7**		**63.6**	**55.0**		**0.19**	**63.77**				**334**			**4.0**	**5.1**		**3.4**	**1.2**		**16.1**	**18.8**					**135**		**3**	**1.7**	**0.004**